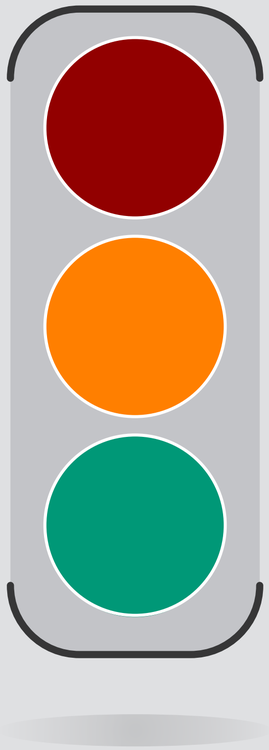
Post-Stroke Spasticity (PSS) Risk Classification System

This tool was created for use by occupational therapists and physiotherapists and is recommended by experts in the field of stroke rehabilitation. It should be used when evaluating patients within the first 12 weeks after a stroke. However, it may still be used at other timepoints. It is recommended that this screening tool be used during regular follow-up visits to identify and manage symptoms of PSS.[1]



URGENT REFERRAL[†]

If one or more of the following criteria are met **and** there are either functional losses or the potential for functional losses:

1. Moderately, markedly, or severely increased muscle stiffness across one or more joints[a,2,3]
2. Severe loss of sensorimotor function (e.g., severe decrease in surface sensation, impaired proprioception, and severe motor dysfunction)[b,c,d,4,5]

- Immediately refer to a physiatrist or neurologist who is experienced in treating spasticity[*]
- Urgently refer to PT/OT experienced in treating spasticity for evaluation and treatment[*]
- Refer to nursing if required for wound care
- Current therapists should consider the following:
  - ☐ Prescribe/adjust exercise program[*]
  - ☐ Functional task training[*]
  - ☐ Stretching/prolonged positioning[*]
  - ☐ Casting/splinting/bracing/taping[*]
  - ☐ Provide patient with reliable and accessible educational resources on managing spasticity[*]

ROUTINE MONITORING

Every 3-6 months[*,‡,§]

If one or more of the following criteria are met **and** there are either functional losses or the potential for functional losses:

1. Mild to moderate increased muscle stiffness across one or more joints[a]
2. Mild to moderate loss of sensorimotor function (e.g., mild to moderate decrease in surface sensation, impaired proprioception and mild to moderate motor dysfunction)[c,d]

- Current therapists should consider the following:
  - ☐ Prescribe/adjust exercise program[*]
  - ☐ Functional task training[*]
  - ☐ Stretching/prolonged positioning[*]
  - ☐ Casting/splinting/bracing/taping[*]
  - ☐ Provide patient with reliable and accessible educational resources on managing spasticity[*]
- If no current therapist, instruct patient, family members and/or caregivers to contact primary care provider for referral when difficulties or impairment occur
- Instruct patient, family members and/or caregivers to seek prompt medical attention if:
  - ➔ Tone increases[*]
  - ➔ Patient has increased difficulty with active or passive movement[*]

PERIODIC MONITORING

Every 6-12 months[*,§]

If one or more of the following criteria are met:

1. Mild muscle stiffness across one or more joints[a]
2. Mild loss of sensorimotor function[c,d]
3. Condition remains stable over time

- Encourage patient to continue with prescribed health maintenance program[*]
- Instruct patient, family members, and/or caregivers to be alert for changes or difficulties with functioning and/or impaired ADLs[*]
  - If difficulties or impairment occur, they should contact the primary care provider for appropriate referral(s)[*]
- Provide patient with reliable and accessible educational resources on managing spasticity[*]
- Instruct patient, family members and/or caregivers to seek prompt medical attention if:
  - ➔ Tone increases[*]
  - ➔ Patient has increased difficulty with active or passive movement[*]

[*] Many thanks to Denise Johnson, PT, Marie-Claude Lemonde, PT, Melanie Lewis, PT, Neenah Navasero, PT, Brenda Semenko, OT, Felicia Wong, PT, and Cathy Watt, OT for their careful consideration of current evidence-based practice in the development of this Canadian version of a PSS risk-based classification system. Expert consensus supports the implementation of such a system to promote early recognition of risk factors and appropriate action in PSS.[1] Health care professionals are encouraged to adapt their practice according to clinical context and their professional judgement.

[†] Long-term monitoring: for patients not receiving botulinum toxin, monitor every 6 months or more frequently. For patients receiving botulinum toxin, a spasticity specialist should monitor the patient at 3-month intervals or more frequently.

[‡] Routine monitoring: for patients not receiving botulinum toxin, monitor every 12 months or more frequently. For patients receiving botulinum toxin, a spasticity specialist should monitor the patient every 4 months or more frequently.

[§] Health care professionals can adapt frequency of monitoring to the patient's general condition and other needs.

[**] Based on the clinical expertise of Dr. Rhoda Allison, Dr. Ganesh Bavikatte, Associate Professor Barry Rawicki, Dr. Maria Matilde de Mello Sposito, Dr. Paul Winston, and Professor Jörg Wissel.

[a] Mildly increased muscle stiffness is characterized by a Modified Ashworth Scale (MAS) score of 1 or +1, while moderately is characterized by a score of 2, markedly is characterized by a score of 3, and severe is characterized by a score of 4[**] (see Bohannon RW et al. 1987[6] for more information).

[b] Measured using the Fugl-Meyer Upper Extremity Scale.[4]

[c] Mild loss of sensorimotor function is characterized by a Chedoke-McMaster Stroke Assessment score of 6-7, while moderate loss is characterized by a score of ≥4 and severe loss is characterized by a score of ≤3.

[d] Mild loss of sensorimotor function is characterized as Stage 6 of the Brunnstrom Stages of Recovery, while moderate loss is characterized as Stage ≥4, and severe loss is characterized as Stage ≤3.

Abbreviations: CMSA, Chedoke-McMaster Stroke Assessment; MAS, Modified Asthworth Scale; OSA, Oxford Strength Assessment; OT, occupational therapist; PSS, post-stroke spasticity; PT, physiotherapist.

The content presented in this tool may not fully reflect the Canadian Stroke Best Practice Recommendations.

This tool was developed with financial support from Allergan, an AbbVie company.

REVIEW NO.: CA-NEUR-220064

REFERENCES

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